



- 알루미늄 및 알루미늄 합금, 동 및 동합금, 강화플라스틱 (CFRP), 유리/탄소섬유 등 비철 비금속 계열의 다양한 피삭재 전용 엔드밀
- 코팅피막에 경도가 높고 마찰계수가 낮은 Tetrabond TAC코팅을 적용하여 내마모성이 우수하며, 피삭재의 표면조도가 월등히 우수합니다.
- 인선부 강성을 보강하여 날부치핑을 최소화 하였습니다.
- 안정적인 고정밀 공차 적용으로 초정밀가공에 적합합니다.
- Endmills for Aluminum, Aluminum alloys, copper, copper alloys, CFRP, glass/carbon fiber, non-ferrous and non-metallic materials.
- Tetrabond TAC coating provides excellent work surface finish by high hardness and low friction.
- Reinforced edge design for preventing edge chipping.
- High precise edge tolerance.



Condition	D Size	D Tolerance	Condition	D Size	D Tolerance
ØD ≠ Ød	Ø0.2 ~ 12	+0 ~ -0.01mm	ØD = Ød	Ø6 ~ 12	-0.005 ~ -0.015mm

단위 : mm

Order Number	날경 Diameter D × R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고
New 2DLC 002 0002 005	0.2 X R0.02	0.3	0.5	45	4	
New 2DLC 002 0002 010	0.2 X R0.02	0.3	1	45	4	
New 2DLC 002 0002 015	0.2 X R0.02	0.3	1.5	45	4	
New 2DLC 002 0005 005	0.2 X R0.05	0.3	0.5	45	4	
New 2DLC 002 0005 010	0.2 X R0.05	0.3	1	45	4	
New 2DLC 002 0005 015	0.2 X R0.05	0.3	1.5	45	4	
New 2DLC 003 0002 010	0.3 X R0.02	0.5	1	45	4	
New 2DLC 003 0002 015	0.3 X R0.02	0.5	1.5	45	4	
New 2DLC 003 0002 020	0.3 X R0.02	0.5	2	45	4	
New 2DLC 003 0005 010	0.3 X R0.05	0.5	1	45	4	
New 2DLC 003 0005 015	0.3 X R0.05	0.5	1.5	45	4	
New 2DLC 003 0005 020	0.3 X R0.05	0.5	2	45	4	
New 2DLC 004 0002 010	0.4 X R0.02	0.6	1	45	4	
New 2DLC 004 0002 020	0.4 X R0.02	0.6	2	45	4	
New 2DLC 004 0002 030	0.4 X R0.02	0.6	3	45	4	
New 2DLC 004 0002 040	0.4 X R0.02	0.6	4	45	4	
New 2DLC 004 0005 010	0.4 X R0.05	0.6	1	45	4	
New 2DLC 004 0005 020	0.4 X R0.05	0.6	2	45	4	
New 2DLC 004 0005 030	0.4 X R0.05	0.6	3	45	4	
New 2DLC 004 0005 040	0.4 X R0.05	0.6	4	45	4	
New 2DLC 004 001 010	0.4 X R0.1	0.6	1	45	4	
New 2DLC 004 001 020	0.4 X R0.1	0.6	2	45	4	
New 2DLC 004 001 030	0.4 X R0.1	0.6	3	45	4	
New 2DLC 004 001 040	0.4 X R0.1	0.6	4	45	4	
New 2DLC 005 0002 020	0.5 X R0.02	0.8	2	45	4	
New 2DLC 005 0002 030	0.5 X R0.02	0.8	3	45	4	
New 2DLC 005 0002 040	0.5 X R0.02	0.8	4	45	4	
New 2DLC 005 0002 050	0.5 X R0.02	0.8	5	45	4	
New 2DLC 005 0005 020	0.5 X R0.05	0.8	2	45	4	
New 2DLC 005 0005 030	0.5 X R0.05	0.8	3	45	4	
New 2DLC 005 0005 040	0.5 X R0.05	0.8	4	45	4	
New 2DLC 005 0005 050	0.5 X R0.05	0.8	5	45	4	
New 2DLC 005 001 020	0.5 X R0.1	0.8	2	45	4	
New 2DLC 005 001 030	0.5 X R0.1	0.8	3	45	4	
New 2DLC 005 001 040	0.5 X R0.1	0.8	4	45	4	
New 2DLC 005 001 050	0.5 X R0.1	0.8	5	45	4	
New 2DLC 006 0002 020	0.6 X R0.02	1	2	45	4	
New 2DLC 006 0002 030	0.6 X R0.02	1	3	45	4	
New 2DLC 006 0002 040	0.6 X R0.02	1	4	45	4	
New 2DLC 006 0002 060	0.6 X R0.02	1	6	45	4	
New 2DLC 006 0005 020	0.6 X R0.05	1	2	45	4	
New 2DLC 006 0005 030	0.6 X R0.05	1	3	45	4	
New 2DLC 006 0005 040	0.6 X R0.05	1	4	45	4	
New 2DLC 006 0005 060	0.6 X R0.05	1	6	45	4	
New 2DLC 006 001 020	0.6 X R0.1	1	2	45	4	
New 2DLC 006 001 030	0.6 X R0.1	1	3	45	4	
New 2DLC 006 001 040	0.6 X R0.1	1	4	45	4	
New 2DLC 006 001 060	0.6 X R0.1	1	6	45	4	
New 2DLC 008 0002 040	0.8 X R0.02	1.2	4	45	4	
New 2DLC 008 0002 060	0.8 X R0.02	1.2	6	45	4	

Order Number	날경 Diameter D × R	날장 Length of cut L1	유효장 Effective Length L2	전장 Overall Length L	샙크 Shank Dia d	비고
New 2DLC 008 0002 080	0.8 X R0.02	1.2	8	45	4	
New 2DLC 008 0005 040	0.8 X R0.05	1.2	4	45	4	
New 2DLC 008 0005 060	0.8 X R0.05	1.2	6	45	4	
New 2DLC 008 0005 080	0.8 X R0.05	1.2	8	45	4	
New 2DLC 008 001 040	0.8 X R0.1	1.2	4	45	4	
New 2DLC 008 001 060	0.8 X R0.1	1.2	6	45	4	
New 2DLC 008 001 080	0.8 X R0.1	1.2	8	45	4	
New 2DLC 010 0005 040	1 X R0.05	1.5	4	45	4	
New 2DLC 010 0005 060	1 X R0.05	1.5	6	45	4	
New 2DLC 010 0005 080	1 X R0.05	1.5	8	45	4	
New 2DLC 010 0005 100	1 X R0.05	1.5	10	45	4	
2DLC 010 001 040	1 X R0.1	1.5	4	45	4	
2DLC 010 001 060	1 X R0.1	1.5	6	45	4	
2DLC 010 001 080	1 X R0.1	1.5	8	45	4	
2DLC 010 001 100	1 X R0.1	1.5	10	45	4	
2DLC 010 002 040	1 X R0.2	1.5	4	45	4	
2DLC 010 002 060	1 X R0.2	1.5	6	45	4	
2DLC 010 002 080	1 X R0.2	1.5	8	45	4	
2DLC 010 002 100	1 X R0.2	1.5	10	45	4	
2DLC 015 001 060	1.5 X R0.1	2.3	6	45	4	
2DLC 015 001 080	1.5 X R0.1	2.3	8	45	4	
2DLC 015 001 100	1.5 X R0.1	2.3	10	45	4	
2DLC 015 001 120	1.5 X R0.1	2.3	12	50	4	
2DLC 015 002 060	1.5 X R0.2	2.3	6	45	4	
2DLC 015 002 080	1.5 X R0.2	2.3	8	45	4	
2DLC 015 002 100	1.5 X R0.2	2.3	10	45	4	
2DLC 015 002 120	1.5 X R0.2	2.3	12	50	4	
New 2DLC 020 001 080	2 X R0.1	3	8	45	4	
New 2DLC 020 001 100	2 X R0.1	3	10	45	4	
New 2DLC 020 001 120	2 X R0.1	3	12	50	4	
New 2DLC 020 001 160	2 X R0.1	3	16	50	4	
2DLC 020 002 080	2 X R0.2	3	8	45	4	
2DLC 020 002 100	2 X R0.2	3	10	45	4	
2DLC 020 002 120	2 X R0.2	3	12	50	4	
2DLC 020 002 160	2 X R0.2	3	16	50	4	
New 2DLC 020 003 080	2 X R0.3	3	8	45	4	
New 2DLC 020 003 100	2 X R0.3	3	10	45	4	
New 2DLC 020 003 120	2 X R0.3	3	12	50	4	
New 2DLC 020 003 160	2 X R0.3	3	16	50	4	
2DLC 020 005 080	2 X R0.5	3	8	45	4	
2DLC 020 005 100	2 X R0.5	3	10	45	4	
2DLC 020 005 120	2 X R0.5	3	12	50	4	
2DLC 020 005 160	2 X R0.5	3	16	50	4	
New 2DLC 030 001 100	3 X R0.1	4.5	10	50	6	
New 2DLC 030 001 120	3 X R0.1	4.5	12	50	6	
New 2DLC 030 001 160	3 X R0.1	4.5	16	60	6	
New 2DLC 030 001 200	3 X R0.1	4.5	20	60	6	
New 2DLC 030 001 250	3 X R0.1	4.5	25	65	6	
New 2DLC 030 001 300	3 X R0.1	4.5	30	70	6	
2DLC 030 002 100	3 X R0.2	4.5	10	50	6	

피삭재 Material	알루미늄 합금 Aluminum Alloy Expanding Material AL7075				알루미늄 합금 주물 / 다이캐스팅 Aluminum Alloys Casting / Die Casting AC4B / Si13%				탄소섬유 / 동합금 Magnesium Alloy / Copper Alloy / CFRP AZ91 / AZ80A / C1100		동합금 Copper Alloy C1100	
	일반가공 Regular Milling		고속가공 High Speed Milling		일반가공 Regular Milling		고속가공 High Speed Milling		일반가공 Regular Milling		고속가공 High Speed Milling	
외경 Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
ø 1	37,500	220	50,000	1,170	37,400	220	50,000	1,170	27,000	160	49,000	820
ø 1.5	37,500	300	50,000	1,430	37,400	300	50,000	1,430	18,000	170	34,700	820
ø 2	30,000	350	40,000	1,430	30,000	350	40,000	1,430	13,500	180	28,000	880
ø 3	20,000	600	27,000	1,430	20,000	600	27,000	1,430	9,400	260	20,000	880
ø 4	15,000	610	20,000	1,430	14,700	610	20,000	1,430	7,000	270	15,200	880
ø 6	10,000	700	13,000	1,430	10,000	700	13,000	1,430	4,700	290	9,400	880
ø 8	7,800	780	11,000	1,560	7,800	780	10,700	1,560	3,400	390	7,700	940
ø 10	5,900	850	7,800	1,820	5,900	850	7,800	1,820	2,700	390	5,600	1,000
ø 12	4,000	900	5,900	1,950	4,000	900	5,900	1,950	2,100	410	4,200	1,100
측면절삭 Side Cutting	Ap	Ae	Ap	Ae	Ap	Ae	Ap	Ae	Ap	Ae	Ap	Ae
	1.2D	0.1D	1D	0.1D	1.2D	0.1D	1D	0.1D	1D	0.1D	1D	0.05D
홈절삭 Slotting	Ap	Ae	Ap	Ae	Ap	Ae	Ap	Ae	Ap	Ae	Ap	Ae
	0.3D	0.8D	0.15D	0.8D	0.3D	0.8D	0.15D	0.8D	0.3D	0.8D	0.1D	0.8D
절입량 Depth of Cut												

- 유효장이 긴 경우에는 회전수와 이송속도를 최대 20% 이하로 줄이십시오.
- 측면 절삭시 코너R 부분을 참고하여 절삭하시기 바랍니다.
- 홈 절삭시 날경의 코너R 대비 Ae 값을 설정 하십시오.
- 상기 절삭조건은 참고 수치이므로 실 가공시 가공 형상, 가공 목적, 적용 기계에 따라 조건변경 요망 합니다.
- 에어브로 혹은 미스트 쿨러를 추천하며 칩 제거 주의 및 가공시 발열, 발화에 주의 하십시오.

- In case of long effective length, reduce the RPM and feed by 20% or less.
- Refer to the corner radius value for side milling
- Consider the corner radius value when you set up the Ae value.
- Use this table for your reference. Adjust the parameters depending on your machining geometry, machining purpose and CNC.
- Air blow or mist coolant is recommended and note for chip emission, heat, or ignition.

3ALR/3ALE

피삭재 Material	알루미늄합금 Aluminum Alloys etc AL7075							
	3ALR Type				3ALE Type			
외경 Outside Diameter	RPM	FEED			RPM	FEED		
		수직 Vertical	홈절삭 Solting	측면절삭 Side Milling		수직 Vertical	홈절삭 Solting	측면절삭 Side Milling
ø 1	35,000	150	585	715	32,000	130	501	605
ø 2	30,000	225	1,170	1,398	25,500	190	995	1,170
ø 3	21,600	225	1,300	1,560	18,400	190	1,100	1,300
ø 4	16,200	300	1,300	1,560	14,000	255	1,100	1,300
ø 5	13,000	300	1,300	1,560	11,000	255	1,100	1,300
ø 6	10,800	300	1,300	1,560	9,200	255	1,100	1,300
ø 8	8,100	300	1,300	1,560	7,000	255	1,100	1,300
ø 10	6,480	250	1,300	1,560	5,500	210	1,100	1,300
ø 12	5,400	200	1,300	1,560	4,400	170	1,100	1,300
ø 16	-	-	-	-	3,200	130	995	1,235
ø 20	-	-	-	-	2,000	85	884	1,105
Milling Amount (mm)		Ap=0.75D	Ap=0.75D	Ap=0.75D/ Ae=0.3D		Ap=0.75D	Ap=0.75D	Ap=0.75D/ Ae=0.3D
절입량 Depth of Cut								